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SIMBIOS Project 2002 Annual Report

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Chapter 1

An Overview of SIMBIOS Project Activities and Accomplishments During FY02

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In many respects, the past year has been one of the most eventful for the satellite ocean biogeochemistry community with the launches of the Aqua Moderate resolution Imaging Spectroradiometer (MODIS), the ENVISAT Medium Resolution Imaging Spectrometer (MERIS), the ADEOS-II Global Imager (GLI), and the ADEOS-II Polarization and Directionality of the Earth's Reflectance (POLDER-II) sensors, as well as a one-year extension of the Sea-viewing Wide Field-of-View Sensor (SeaWiFS) data buy contract. However, the past year has also been one of transition for the SIMBIOS program as NASA Headquarters decided to discontinue the program in its present form. The rationale centered on three considerations. The first was a desire by Headquarters (HQ) to integrate the various ocean color calibration and validation activities of the SIMBIOS, SeaWiFS, and the MODIS programs under a common ocean color team which would also include investigators supported under the NASA Ocean Biogeochemistry program. While the three ocean color projects have separate management and funding structures, they have been coordinated and mutually supportive with little redundancy. The second consideration stems from initial problems with MODIS ocean data quality and accessability which has made it imperative for NASA focus its available resources on MODIS ocean calibration and validation. The third consideration is the National Polar Orbiting Environmental Satellite System (NPOESS) Preparatory Project (NPP) which is scheduled to launch in 2007. NPP includes the Visible Infrared Imaging Radiometer Suite (VIIRS) which will provide ocean color data products after MODIS. VIIRS has a design with incorporates a SeaWiFS-like rotating telescope, focal planes similar to MODIS, and a basic set of ocean color bands which does not include the MODIS fluorescence bands. HQ has asked that the VIIRS ocean color data processing build on the expertise and systems resident at Goddard Space Flight Center (GSFC). Initial NPP discipline processing data system formulation has begun and development should be well underway by 2004. As a result, much of the SIMBIOS Project's effort this past year has centered on the fourth SeaWiFS reprocessing and on assisting the MODIS ocean team. Consequently, the Project has had to assume a less proactive participation in the international missions.

Nonetheless, during FY02, the Project made substantial progress and contributions in a variety of activities including the following:

- Assisting the SeaWiFS Project with the fourth reprocessing, particularly in the area of product validation using match-up data contributed by the SIMBIOS Science Team.
- Continued development and documentation of the SeaWiFS Bio-optical Archive and Storage System (SeaBASS; Werdell and Bailey, 2002) including 310 new cruise data sets and 102 cruise updates provided by the SIMBIOS Science Team.
- Continued refinement of sun photometer calibration and data analysis procedures (Knobelspiesse et al., in press) and incorporation of the data products into SeaBASS.
- Completion of the third revision of the in-situ measurement protocols (Mueller et al., 2002).
- Documentation of the second SIMBIOS calibration round-robin (Meister et al., 2002) and completion of third which included three laboratories associated with MODIS ocean team members (NASA Wallops Flight Facility, University of Miami, and the University of South Florida).
- Development and support of a website for the diagnostic data sets which presently includes data from SeaWiFS and MODIS (Terra and Aqua).
- Evaluations of various data merger methodologies and the routine merger of global SeaWiFS and MODIS products.